









International Conference on **Recent Advances of Probability and Statistics in** Interdisciplinary Research (RAPSIR) February 6-8, 2024

> Department of Statistics, Faculty of Science, University of Allahabad, Prayagraj, India-211002

# Jointhy Organized

Indian Society for Probability and Statistics (ISPS) In conjunction with 43<sup>rd</sup> Annual Convention of ISPS-2024

> Pre-convention Workshop on **Advanced Data Science Techniques** on February 5, 2024 (for ISPS life members only)



https://allduniv.ac.in/faculties/statistics rapsir2024@allduniv.ac.in •

# Organizing Committee

#### **Chief Patron**

Prof. Sangita Srivastava

Hon'ble Vice Chancellor, University of Allahabad (UoA), Prayagraj

Chairman

Dr. P. S. Pundir

Head, Department of Statistics, UoA

**Organizing Secretaries** 

Dr. G. Madhu Sudan Department of Statistics, UoA **Dr. Abhay Pratap Pandey** Department of Statistics, UoA

Dr. Priyanka Singh Department of Statistics, UoA

Dr. Prashant Verma Department of Statistics, UoA

**Members** 

**Dr. Randhir Singh** ECC, Prayagraj Mr. Ved Prakash Singh ISDC, Prayagraj

Prof. Shruti UPRTOU, Prayagraj Dr. Purnendu Mishra UoA, Prayagraj

ECC, Prayagraj Dr. Anuj Kumar Singh UPRTOU, Prayagraj

Dr. Anupama Singh

# Mr. Ashish Kumar ADC, Prayagraj Advisory Committee

Prof. J.N.K. Rao, Carleton Univ. Prof B.L.S. Prakash Rao, ISI-K Prof. Ravindra Khatree, Oakland Univ. Prof. Bechan Sharma, Dean, UoA Prof. Kuldeep Kumar, Bond Univ. Prof. Shalabh, IIT-K Prof T.V. Ramanathan, SPPU Prof. J. Sethuraman, USA Prof. Kanchan Jain, PU Prof C. Raghavendra Rao, UoH Prof. P.K. Singh, UoA Prof. Ranjita Pandey, DU Prof. Umesh Singh, BHU Prof. Ashish Khare, UoA Prof. Hare Krishna. CCSU Dr. A.V. Prasad, NAAC Dr. M. Vishnu Vardhan Rao, ICMR **Prof. Arvind Pandey, CURAJ** Prof. M. Bhupathi Naidu, SVU

#### Prof. Ram C. Tiwari, BMS, USA Prof. Debashis Kundu, IIT-K Prof. Ashis Sen Gupta, ISI-K Prof. John Kershaw, Univ. of New Brunswick Sh. Devendra Pandey, FSI Prof. Somesh Kumar, IIT-Kh Prof Raieev L. Karandikar. Chair NSC Prof. Rakesh Srivastava, MSU Prof V.V. Haragopal, BITS Prof. TPM, Pakkala, Mangalore Univ. Prof. S.I. Rizvi, UoA Prof. D.K. Ghosh, SU Prof. K.K. Singh, BHU Prof. JPS Joorel, Jammu Univ. Prof. G.P. Singh, BHU Prof. O.K. Belwal, HNBGU Prof. Surendra Kumar, BBAU Dr. Ishapathik Das, IIT-T Dr. B. Sarojamma, SVU

Prof. Anoop Chaturvedi, UoA Prof. Alok Pandey, CSN, USA Prof. A.M. Mathai, McGill Univ. Prof. G.S. Pandey, UoA Prof. Neeraj Tiwari, SSJUniv. Prof. Rajeev Pandey, LU Prof. K. Srinivasa Rao, AU Prof. P.G. Sankaran, CUSAT Dr.Sudheesh, ISI-Ch Prof. N. Balakrishna, CUSAT Prof. R.P. Shukla, UoA Prof. V.K. Singh, BHU Prof. S.K. Upadhyay, BHU Prof. S.K. Singh, BHU Prof. Shashi Bhushan, LU Prof. Madhulika Dubey, BBAU Prof. Jitendra Kumar, CURAJ Prof. S. A. Jyoti Rani, Osmania Univ. Prof. D.S. Hooda K.U Shri A K Kanojia, Joint Registrar & CoE

# **ISPS** Executive Committee

President Vice Presidents Secretary Joint Secretary Treasurer Members 잂 비

Prof. S.C. Malik Prof. Aguil Ahmad, Prof. R.L. Shinde Prof. C. Satheesh Kumar Dr. R.S. Latpate Dr. M. Venkateswaran Prof. B. Muniswamy Prof. Arvind Pandey Dr. Asha Gopalkrishna Prof. Debasis Kundu Dr. Neha Garo Prof. P Rajasekhara Reddy

Dr. Prafulla Swain Dr. K.M. Saktivel Dr. P. Lavanya Kumari Dr. R. Vishnu Varadhan Prof. A. Thalwar Prof. Somesh Kumar Prof. N. Balakrishna Prof. Ranjitha Pandey

Hon President

Convener Dr. Girish Chandra

Department of Statistics, UoA

Treasurer

Dr. Neel Kamal Tripathi

ISDC, Prayagraj

#### ABOUT UNIVERSITY OF ALLAHABAD

The University of Allahabad is a central university located in Prayagraj, Uttar Pradesh, India. It was established on September 23, 1887 through an act of parliament and has since achieved the status of being an Institute of National Importance. It stands as one of the oldest modern universities in India after Calcutta, Bombay and Madras Universities. The university boasts a rich legacy of renowned scholars, scientists, writers and artists such as Meghnad Saha, Amarnath Jha, Firag Gorakhpuri, Kshitindranath Majumdar etc. who have contributed to the institution's thriving academic and cultural endeavors.

#### ABOUT THE DEPARTMENT OF STATISTICS

The Statistics wing, under the Department of Mathematics, was started in 1968 with the initiative of Prof. H. C. Khare, then acting Head of the Department of Mathematics. The wing became operational immediately, with the first batch of B.Sc. I and M.Sc. previous students enrolling simultaneously. Soon, Mr. C. C. Pant was appointed in the Wing, and he primarily taught Statistics courses; other courses such as Numerical analysis and Econometrics were taught by faculty members from the Departments of Mathematics and Economics. In 1974, Dr. Samir K. Bhattacharya, Dr. Ram C. Tiwari and Dr. G. S. Pandey were appointed as regular teachers of Statistics and the Statistics wing continued to operate under the leadership of Prof. Bhattacharva, In 1981, Dr. Anoop Chaturvedi joined as a faculty member of the Department, followed by Dr. S. Lalitha in 1986. Mr. Vishnu Kumar Srivastava, Mr. R.N. Verma, Mr. Rai Kumar Srivastava, Dr. Aiit Chaturvedi and Dr. Anup Kumar also served the department for a shorter period. On August 21, 2000, the Department was established as a separate entity from Mathematics, with Dr. G. S. Pandev appointed as the first Head of Department, alongside Dr. Anoop Chaturvedi and Dr. S. Lalitha as faculty members. The Department offers courses for Undergraduate, Postgraduate degrees, and a Doctoral program leading to a Ph.D. degree. Currently, the Department has six faculty members with specialization in different areas of statistics such as Sampling Techniques, Reliability Theory, Bayesian Statistics, Order Statistics, Quality Control, Sequential Analysis, Survival Analysis, Mathematical Demography, Biostatistics and Stochastic Modeling, Furthermore, the Statistics Department provides statistical support to various interdisciplinary branches and has contributed to numerous research projects, including Control Charts for Autocorrelated Observations on Grid, Sustainable Development: A Mathematical Model, joint Big Data project, among others.

### ABOUT PRAYAGRAJ

Prayagraj (formerly known as Allahabad) is located in eastern Uttar Pradesh in the northern region of India. The city is a primary center for culture, religion and education. The confluence of Ganga, Yamuna and mythical Saraswati rivers defines this city. Many national and regional headquarters of administration, military and research facilities are located in Prayagraj. This is also famous for producing 7 out of 14 Prime Ministers of India - Jawahar Lal Nehru, Lal Bahadur Shastri, Indira Gandhi, Rajiv Gandhi, Gulzari Lal Nanda, Vishwanath Pratap Singh and Chandrashekhar, they all were either born in Prayagraj, were alumni of University of Allahabad or were elected from a Pravagrai-based constituency.

Climate: The weather of Prayagraj is usually warm. The average temperature in February is 20.5°C (69°F), in a range of 13°C (55.5°F) to 28°C (82°F).

Tourist Attractions: Sangam (confluence of rivers), Akbar's Fort on the bank of Ganga, All Saints Cathedral, Chandrashekhar Azad Park, Khusro Bagh, Anand Bhawan, Yamuna Bridge etc. The nearby famous places are: Varanasi, Lucknow, Chitrakoot, Ayodhyaetc. For more information, please visit the website https://www.uptourism.gov.in/ of UP Tourism.

Languages Spoken: Hindi, Urdu, English

**Connectivity:** It is well connected with air, train, and road transport from major cities of India.

## **OBJECTIVES/ RELEVANCE OF THE CONFERENCE**

- To bring academicians and researchers together from across the globe on a forum for discussion and dissemination of advance ideas and principles in Probability and Statistics and its application in other disciplines like agriculture, medicine, epidemiology, social sciences, forestry, environment etc.
- To familiarize the researchers of different disciplines to the basics and introduce to them the recent developments in multidisciplinary data science. Mathematical and rigorous foundations of statistical theory needed in these areas will be presented with specific applications. These will be supplemented by exposure to modern computational techniques which are required in this connection for the above areas.
- To promote the interaction and collaboration between academicians/researchers at the international level with the emerging real-life problems

Branch

- . To familiarize young researchers towards the in-depth knowledge and utility of Applied Statistics.
- To develop competency among researchers of other disciplines in selection of proper experimental designs, sampling methods and other statistical computational techniques.

#### **CONVENTION EVENTS**

- Keynote Address
- Plenary Sessions
- Invited Sessions
- Memorial Session
- Endowment Sessions
- · Contributory Sessions

**BANK DETAILS** 

- Fellow of ISPS Award Name of Account (in favor of): A U International Conference RAPSIR 2024 Distinguished Statistician Award Account Number : 1001000100763023 Best Research Paper Award Best Poster Award Name of the Bank Punjab National Bank · Young Researcher Award **IFSC Code** 
  - · Best Ph.D. Thesis Award
  - Student Project Competition Award

AWARDS

- Ξ. PUNB0100100
- : ALLAHABAD, COLONELGANJ

#### CALL FOR PAPERS

The original and unpublished research papers from academicians, researchers, industrialists, and students are invited to present during RAPSIR-2024 in the following themes.

Probability Theory and Applications	Statistics in Quality, Reliability and Operation Research	Statistics in Agricultural and Medicine
Bayesian Statistical Inference	Demography and Population Studies	Environmental and Forestry Statistics
Time Series Analysis and Forecasting Models	Data Science Techniques	Bioinformatics / Bio Statistics / Survival Analysis
Survey Sampling	Mathematical Modelling	Sustainable Development Goals
Planning and Experimental Designs	Econometrics	Applied Statistics
Statistics in Management	Deterministic and Stochastic Modelling	Univariate and Multivariate Analysis

The abstract of paper should be focused on the items such as objective of the study, methodology, research findings, significance and scope of the study in the prescribed format.

Text Format	Latex/MS word Format, Times New Roman, Font size 12		
Title	Only initial letter caps, length max. 200 characters		
Author(s)	Type all authors names with initial letter caps, include affiliations. Mention the presenting authors name and email id at bottom.		
Keywords	Maximum 5 keywords or phrases		
Abstract body	Limited to 250 words		
Equipment needs	Indicate audio-visual equipment needs for presenting paper		
Paper subject classification	Closest proximity from the list of "Session Themes"		
Online R	Online Registration Link: https://forms.gle/oVkdwcQSr2gFGLVHA		

The interested delegates are requested to submit/upload the soft copy of abstract on or before November 15, 2023 through the registration link. The acceptance of the abstract will be communicated after the recommendations of the expert's committee before December 15, 2023. The selected participants are required to complete the registration by paying the required registration fee either through online mode or by sending Demand Draft as per the given bank details.

#### **REGISTRATION FEE**

	before 31.12.2023	Workshop fee, after	ISPS Life Members		Other Participants	
Participants		31.12.2023 (for ISPS members only)	Conference fee, before 31.12.2023	Conference fee, after 31.12.2023	Conference fee before 31.12.2023	Conference fee, after 31.12.2023
Faculty/Scientists	₹ 1,000	₹ 1500	₹ 4000	₹ 5000	₹ 5000	₹ 6000
Industry personnel	₹ 1,000	₹ 2000	₹ 5000	₹ 6000	₹ 6000	₹ 7000
Accompanying person	₹ 700	₹ 1000	₹ 3000	₹ 4000	₹ 3000	₹ 4000
Foreign delegates	US\$ 80	US\$ 100	US\$ 240	US\$ 280	US\$ 300	US\$ 350
<b>Research Students</b>	₹ 700	₹ 1000	₹ 2400	₹ 3000	₹ 3000	₹ 3500

Note: Accompanying person will not be provided the conference kit. The participants attending both workshop and conference will get 10% discount in the registration fee.

#### **IMPORTANT DATES**

Conference Announcement	:	June 29, 2023
Submission of Abstracts	:	November 15, 2023
Notification of Acceptance	:	December 15, 2023
Early Bird Registration	:	December 31, 2023
PPTs Submission for	:	January 15, 2024
Presentation	:	January 15, 2024
<b>Full Length Paper for Publication</b>	:	February 5, 2024
Pre-Conference Workshop	:	February 6-8, 2024
Conference Dates		

#### PRINTING OF PROCEEDINGS

The proceeding of the conference will be published from the reputed publisher (possibly from Springer/Elsevier) after reviewing the full length papers by the editors and reviewers.

#### ACCOMMODATION

Only limited accommodation to the delegates/participants on twin sharing basis will be made available by the organizers in the Guest Houses/Hotels on requests for which the tariffs have to be borne by them. However, participants are encouraged to make their own arrangements for accommodation.

#### HOW TO REACH PRAYAGRAJ

By Air: Prayagraj airport is about 15 Km away from the University of Allahabad. Airport is connected to major cities like Delhi, Kolkata, Lucknow and Dehradun. Airport to city taxi charge is about Rs 800. Abroad travelers need to get connection flights from Delhi or Kolkata.

By Train: Railway station in Prayagraj is a major railway station of north India and is situated in the heart of the city. The railway station is very well connected to all the major cities in India. The trains Vandev Bharat, Raidhani, Sampark Kranti are usually preferred by the travelers.

By Bus: Very good road services are available in Prayagraj. Uttar Pradesh Roadways buses are running to most of the cities in Uttar Pradesh. From Allahabad bus services are available to Lucknow (200 Km), Kanpur (200 Km), Delhi (650 Km) and Kolkata (800 Km) etc.

#### For more Details Please Contact

Accommodation and local transport : Dr. Abhay Pratap Pandey. Mb: 6394023741 Registration: Dr. Priyanka Singh Mb: 8384863740 Treasurer: Dr. Prashant Verma Mb: 8934096756 Hospitality: Dr. G. Madhu Sudan Mb: 9490343900 Convener: Dr. Girish Chandra Mb: 9410542274 Chair: Dr. P.S. Pundir Mb: 9411884011



# Indian Society for Probability and Statistics (ISPS) Competition Events for the Year 2023



The Indian Society for Probability and Statistics invites applications/nominations for the following competitions during its 43<sup>rd</sup> Annual Convention to be held at **University of Allahabad**, U.P. from 6<sup>th</sup> to 8<sup>th</sup> February 2024.

a) The ISPS invites Research Papers for the Annual Research Awards for the year 2023 from Research Scholars and Doctorates working in Statistics / Applied Statistics. The Competition events are:

- 1. ISPS Young Statistician Award (Dr. J. Sethuraman Gold Medal)
- 2. Dr. A.M. Mathai Cash Prize (Rs. 10,000/- + 5000/- Travel Support)
- 3. Dr. M.N. Gopalan Prize (Rs. 3,000/-)
- 4. Dr. B.K. Kale Prize (Rs. 2500/-)
- The contestant should be under 35 years of age as on 31. 12. 2023.
- An updated CV and soft copies of the research paper (one blinded and one with name and affiliation) may be sent to
- Prof. Somesh Kumar on or before 15.10.2023.
- Paper should not have published or communicated to any journal.
- Paper should be single authored.

#### b) Prof. A.R. Kamat Award for Best Ph.D. Thesis in Statistics, 2023 Sponsored by Prof. Jagannatha Wani

The ISPS invites entries for Professor A.R. Kamat Award for Best Ph.D. Thesis2022 from the researchers working in Statistics / Applied Statistics in India / Abroad.

- Contestants should be under 35 years of age as on 31.12.2023. Thesis should be submitted to the University during the period from 01- 07-2021 to 30-06-2023(two years period). Old thesis will not be considered.
- A soft copy of the blinded version of Ph.D. thesis along with biodata should be sent to email address of Prof. R.L. Shinde on or before 15-10-2023.
- Prize Money Rs. 40,000/-

#### c) ISPS M.Sc. Student Project Competition

Title: "Growth and Impact of Online Services in India"

Eligibility: A team of 3 students studying M.Sc., Statistics / Applied Statistics.
Only one team is eligible from each University.
Note: ISPS will provide T.A, registration fee will be waived and accommodation will be provided by the organizers.

**Entries** : A soft copy of the Student Project (in MS word) may be sent to Prof. C Satheesh Kumar on or before 15.10.2023.

<u>Convener</u> Prof. C. Satheesh Kumar Secretary of ISPS Kerala University Trivandrum e-mail: profcskumar@gmail.com Mobile: 9895980078

<u>Convener</u> Prof. Somesh Kumar Dept. of Mathematics IIT, Kharagpur KHARAGPUR - 721302 e-mail: smsh@maths.litrgp.ac.in someshkumar1965@gmail.com

<u>Convener</u> Prof. R.L. Shinde Vice-President of ISPS Head, Dept. of Statistics and Actuarial Science School of Mathematical Sciences, KBC North Maharasthra University, Jalgam, Maharastra E-mail: rlshinde@nmu.ac.in Cell : 7030231220

# **ISPS Research Awards**

Templates of Applications/Nominations for the following awards are available at ISPS website: www.isps.org.in. The aspirants may send their nominations/applications along with an updated CV on or before 15.10.2023.

#### 1. Dr. C.R. Rao Gold Medal

Nominations/applications are invited for "C R Rao Gold medal in Statistics for 2023". This medal was donated by Professor C. R. Rao to recognize the young researchers in Statistics who made significant contributions. Eligibility Criteria: The nominee/applicant should

(a) be an active researcher in theoretical or applied areas of Statistics.

- (b) be below 45 years of age as on 31st December of the financial year in which medal is given,
- (c) have made significant contributions in applied/theoretical statistics,

(d) have acquired a degree of Ph.D and published at least 5 research papers in SCI journals of Statistics. Professor C.R. Rao award carries a gold medal along with a citation.

The Awardee will be invited to present his/her research work at the venue of the annual convention of that particular year.

#### 2. Prof. K. Srinivasa Rao ISPS Best Researcher Award

In recognition of the outstanding contribution of Prof. K. Srinivasa Rao, a renowned statistician and distinguished researcher, to the subject of Statistics and its allied fields, the ISPS has instituted "Prof. K. Srinivasa Rao Best Researcher Award in Statistics" to honor researchers for their significant contribution in the field of Statistics. Nominations/applications are invited for "Prof. K.Srinivasa Rao. Rao Best Researcher Award in Statistics for 2023". The award and eligibility criteria are as under:

#### (i) The Award:

(a) Prof. K.Srinivasa Rao Best Researcher Award in Statistics carries a cash prize along with a citation, shawl and Memento.

(b) Boarding and lodging is also to be provided to the awardee for participating in the award presentation ceremony.

#### (ii) Eligibility Criteria: The nominee/applicant should:

(a) be a Statistician in the age group of 45 years to 60 years as on 31st December of the financial year in which award is given,

(b) have made significant and outstanding contributions in applied/theoretical statistics, significantly benefiting advancement of knowledge in Statistics,

(c) have acquired a degree of Ph.D/D.Sc and published at least 15 research papers in SCI journals of Statistics,

(d) have successfully guided at least 4 students for their Ph.D. degrees in Statistics (or) successfully completed 4 research Projects/consultancy projects of not less than Rs 5 Lakhs each funded by reputed funding agencies.

#### 3. Prof. M.N.Deshpande memorial award

Nominations/applications are invited for "Prof. M.N.Deshpande memorial award" for the year 2022-23. Details about the award and eligibility criteria are as under:

1. The Award: (a) Prof. M.N.Deshpande memorial award for Best Young Researcher in Statistics carries a cash prize of Rs 10,000/- along with a citation, shawl and memento.

2.Eligibility Criteria: The nominee/applicant should:

(a) be a life member of ISPS/ At the time of receiving Award. (b) be a researcher in Statistics with age not exceeding FORTY years as on 31st December of the financial year in which award is given, (c) have made significant and outstanding contributions in applied/theoretical statistics, significantly benefiting advancement of knowledge in Statistics. (d) have acquired a degree of Ph.D/D.Sc and published at least 10 research papers in SCI/SCIE journals of Statistics of which at least THREE are published within the last five years.

3. Submission of applications/nominations The eligible candidates can nominate themselves or the names can also be proposed by their institutions / ISPS life members. Applications/nominations of the eligible candidates should be submitted in prescribed format through email in the format along with a recent CV and best three publications within the last five years. The last date for the receipt of duly filled-in and complete applications/nominations is ....

4. Procedure for selection of awardee (a) The selection of awardee will be done based on applications/nominations received. (b) The Award Committee of ISPS can also identify and nominate candidates. (c) No award will be given in case the award committee does not identify a suitable candidate for that particular year. The decision of the award committee is final.

#### 4. Distinguished Statistician Award (Below Age: 65 years)

The ISPS invites applications/ nominations for D.S. Award 2023 among eminent Statisticians from Indian Universities / Institutions or Abroad. He/She must be a Senior Life Member of ISPS and should be below 65 years of age as on 31. 12. 2023.

#### 5. ISPS Fellowships

Nominations for the award of ISPS Fellowship 2023 may be sent to Prof. P. Rajasekhara Reddy on or before 15.10. 2023.

# For Rules & Regulations of the above

events & Awards see the website www.isps.org.in

<u>Convener</u> Prof. S.C. Malik President of ISPS M.D. University Rohthik, Haryana E-mail: sc\_malik@rediffmail.com E-Mobile : 9813104668

Prof. Aquil Ahmed Vice - President of ISPS Dept. of Statistics and Operation Research, Aligarh Muslim University, Aligarh- 202 002 E-mail: aquilstat@gmail.com Mobile : 9412730450

<u>Convener</u>

<u>Convener</u> Prof. Asha Gopalakrishnan Sr. Professor, Dept. of Statistics, CUSAT, Cochin, Kerala E-mail: ashagopalakrishna@gmail.com asha@cusat.ac.in

Prof. P. Rajasekhara Reddy Hon. President of ISPS No.3-1-90/2, IInd Cross (East), Vidyanagar Colony, Tirupati-517 502, Chittoor District, A.P Mob: 7093944079 | e-mail: 1980isps@gmail.com | putharsr@yahoo.co.in

<u>Convener</u> **Prof. N. Balakrishna** President (Past) of ISPS Dept. of Statistics, CUSAT, Cochin, Kerala e-mail: nb@cusat.ac.in Mobile: 9446605682